

MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE. Assistant Editor: FRANK OWEN STETSON.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for January, 1905, is based on data from about 3583 stations, classified as follows:

Weather Bureau stations, regular, telegraph, and mail, 176; West Indian Service, cable and mail, 4; River and Flood Service, regular 52, special river and rainfall, 363, special rainfall only, 98; voluntary observers, domestic and foreign, 2565; total Weather Bureau Service, 3258; Canadian Meteorological Service, by telegraph and mail, 33; Meteorological Service of the Azores, by cable, 2; Meteorological Office, London, by cable, 8; Mexican Telegraph Company, by cable, 3; Army Post Hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Company, 96; Hawaiian Meteorological Service, 1; Jamaica Weather Service, 130; Costa Rican Meteorological Service, 25.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Lieut. Commander H. M. Hodges, Hydrographer, United States Navy; H. Pitier, Director of the Physico-Geographic Institute, San José, Costa Rica; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological

Office, London; H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; and Señor Enrique A. Del Monte, Director of the Meteorological Service of the Republic of Cuba.

Attention is called to the fact that at regular Weather Bureau stations all data intended for the Central Office at Washington are recorded on seventy-fifth meridian or eastern standard time, except that hourly records of wind velocity and direction, temperature, and sunshine are entered on local standard time. As far as practicable, only the seventy-fifth meridian standard of time, which is exactly five hours behind Greenwich time, is used in the text of the REVIEW. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is $157^{\circ} 30'$, or $10^{\circ} 30'$ west of Greenwich. The Costa Rican standard meridian is that of San José, $5^{\circ} 36'$ west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

During January an unusually large number of storms passed off to sea by way of Nova Scotia and Newfoundland, and barometric pressures were, therefore, generally low over the western North Atlantic. Pressures were relatively high, in this region from the 6th to the 13th, and from the 29th to 31st, and were high between Bermuda and the south Atlantic coast from the 16th to the 19th. Over the Azores, pressures were generally high, except from the 12th to the 15th, when a disturbance of considerable strength moved northeastward over the islands. The observatory at Horta reported a minimum pressure of 29.40 inches on the 13th, and a maximum wind velocity of 48 miles an hour on the 14th. Over the British Isles, pressures were high from the 1st to the 4th, low from the 5th to the 12th, high on the 13th, low from the 14th to the 20th, and generally high during the remainder of the month. The storm that passed over the Azores on the 13th reached the Irish coast with much increased intensity on the 14th, when Valencia reported a barometer reading of 28.82 inches. During the passage of this storm high winds and gales were reported from all coast stations of the United Kingdom, and considerable damage was sustained by shipping, particularly by small fishing craft.

In the United States several storms of moderate intensity passed along the Gulf coast, and then up the Atlantic coast, increasing somewhat in strength as they progressed. A number of storms passed over the northern part of the country and off to sea by way of the north Atlantic coast. On the 3d a storm center that had traversed the Missouri and Ohio valleys, increasing in strength, reached the

Virginia coast with central pressure 29.38 inches. It then passed up the Atlantic coast; at 8 a. m. of the 4th the center was off the Massachusetts, and at 8 p. m. off the Nova Scotia coast. Rain preceded this storm in the New England and Middle Atlantic States, turning into snow with rapidly falling temperature. The snowfall was heavy and drifted badly in many localities, delaying traffic on steam and electric roads. New York City and vicinity suffered particularly in this respect. The winds along the coast reached velocities as high as 60 miles an hour and occasioned some loss to shipping. Ample warnings had been given of the approach of this storm. On the 25th a storm center that had traversed the Lake region, and another that had moved up the Atlantic coast, united off the New Jersey coast and formed a disturbance of considerable strength. This storm center moved up the coast, increasing in intensity, and at 8 p. m. was central over Cape Cod. At 8 a. m. of the 26th it was near Sydney. High winds were reported along the middle Atlantic and New England coast and a number of vessels was driven ashore. Some damage was sustained but no lives were lost. Heavy snow drifted by high winds delayed railroad and street car traffic in many places, and the low temperature which accompanied the snow and wind caused much inconvenience and in some cases loss of life. Ample warnings of this storm had been given by the Weather Bureau, and by keeping vessels in port, shipping interests avoided serious loss. Very few storms appeared off the Pacific coast during the month, and these were unaccompanied by winds of great violence.

The first cold wave of the month appeared over the Dakotas